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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,792	03/08/2001	Paul A. Hosier	D/A1102	8347

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EXAMINER

SOHN, SEUNG C

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 10/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,792

Applicant(s)

HOSIER ET AL.

Examiner

Seung C. Sohn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-37 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The amendment to the specification filed on August 2, 2002 has not been entered because it contains wrong instruction and does not have a mark-up copy.

2. The disclosure is objected to because of the following informalities:

On page 3, line 22, -- to -- should be inserted between "adjacent" and "a functional edge".

On page 8, line 8, "Figure" should be -- Figure 4 --.

On page 8, line 9, "row 16" should be -- row 16A, 16B and 16C --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. ***Claims 1, 6-11, 14-20, 22-24, 26, 28-31, 33-35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Koizumi et al. (Patent No. US 5,698,892).***

Referring to claims 1 and 11, Koizumi et al. shows in Fig. 11 the following elements of Applicant's claim:

a) a main surface (11, i.e., substrate), having at least one photosite (91, i.e., photoelectric conversion portion) thereon, the main surface defining an edge (each side of scribe region 92) (Col. 1, lines 36-42);

b) a groove (formed by the scribe region 92 on the surface) portion defined at the edge (Col. 2, lines 46-47 and claim 3);

c) a light-transmissive planar layer (Fig. 11C, transparent resist) disposed over the main surface (11), the planar layer forming a planar surface substantially parallel with the main surface (11), the planar layer extending over the groove portion (Col. 2, lines 57-58); and

d) a light-transmissive filtering layer (Fig. 11D: 96, 98 and 99) disposed over the planar layer (Col. 2, lines 59-61).

Referring to claims 6 and 14, Koizumi discloses that the planar layer is substantially transmissive of visible light (i.e., transparent resin) (Col. 2, line 64), and the filtering layer is transmissive of a predetermined range (red, blue and green) of wavelengths of light (Col. 2, lines 59-60).

Referring to claims 7, 15 and 20, Koizumi discloses that the filtering layer comprises a first portion (96) transmissive of a first predetermined range of wavelengths (red) of light and a second portion (99) transmissive of a second predetermined range of wavelengths (blue) of light (Col. 2, lines 59).

Referring to claim 8, Koizumi discloses that the first portion (96) is disposed over a first photosite (the photoelectric conversion portion below 96) and the second

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portion (98) is disposed over a second photosite (the photoelectric conversion portion below 98) (Col. 2, line 59).

Referring to claims 9, 16 and 28-29, Koizumi discloses that the first portion (96, i.e., R) is disposed over a first set of photosites (photoelectric conversion portions below Rs) and the second portion (99, i.e. B) is disposed over a second set of photosites (photoelectric conversion portions below Bs) (Col. 2, line 59-60).

Referring to claims 10, 30 and 37, Koizumi discloses a ridge (each side of photoelectric conversion portion) defined on the main surface between the photosite and the groove portion (Col. 2, lines 48).

Referring to claim 17, Koizumi shows in Fig. 11C a second photosensitive chip (the left side from scribe region 92), the second chip having a planar layer and a filtering layer arranged substantially similarly to the first chip.

Referring to claim 18, Koizumi shows in Fig. 11C a second photosensitive chip (the left side from scribe region 92), the second chip having a plurality of photosites thereon, the first chip and the second chip being arranged to yield a single functional array of photosites.

Referring to claim 19, Koizumi shows in Fig. 11C a second photosensitive chip (the left side from scribe region 92), the second chip having a planar layer and a filtering layer arranged substantially similarly to the first chip.

Referring to claim 20, Koizumi et al. shows in Fig. 11 the following elements of Applicant's claim:

a) a first chip area (the right side from scribe region 92) defined in a main surface (11, i.e., substrate) of the wafer, the first chip area including structure related to a first photosite (91, i.e., photoelectric conversion portion) (Col. 1, line 17-19);

b) a groove (formed by the scribe region 92 on the surface) defined in the wafer, the groove defining at least one edge (each side of scribe region 92) of the first chip area (Col. 2, lines 46-47 and claim 3); and

c) a light-transmissive planar layer (Fig. 11C, transparent resist) disposed over the main surface (11), the planar layer forming a planar surface substantially parallel with the main surface (11), the planar layer extending over the groove portion (Col. 2, lines 57-58).

Referring to claim 22, Koizumi shows in Fig. 11C the planar layer (transparent resist) further disposed over the first photosite (96, i.e., R).

Referring to claim 23, Koizumi shows in Fig. 11C a filtering layer (96, 98 and 99) disposed over the planar layer.

Referring to claims 24, 26 and 35, Koizumi shows in Fig. 10 the filtering layer extending over the first photosite and over the groove (Col. 1, lines 43-53).

Referring to claim 31, Koizumi et al. discloses in Fig. 11 the following steps of Applicant's claim:

a) providing an integrated circuit wafer (Col. 1, lines 17-19), the wafer comprising a first chip area (the right side from scribe region 92) defined in a main surface (11, i.e., substrate) of the wafer, the first chip area including

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structure related to a first photosite (91, i.e., photoelectric conversion portion) (Col. 1, line 17-19), and a groove (formed by the scribe region 92 on the surface) defined in the wafer, the groove defining at least one edge (each side of scribe region 92) of the first chip area (Col. 2, lines 46-47 and claim 3); and

b) providing a light-transmissive planar layer (Fig. 11C, transparent resist) disposed over the main surface (11), the planar layer forming a planar surface substantially parallel with the main surface (11), the planar layer extending over the groove portion (Col. 2, lines 57-58).

Referring to claim 33, Koizumi discloses the step of dicing the wafer along the groove (Col. 2, lines 65-67).

Referring to claim 34, Koizumi discloses the step of providing a filtering layer disposed over the planar layer (Col. 2, lines 59-61).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. ***Claims 2, 12, 21 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (Patent No. US 5,698,892).***

R referring to claims 2, 12, 21 and 32, Koizumi et al. discloses as above, but is silent that the planar layer comprises acrylic. It would have been obvious at the time the

invention was made to a person having ordinary skill in the art to provide acrylic planar layer in the device of Koizumi et al since acrylic is notoriously well used for cast and molded parts or as coatings and adhesives.

7. Claims 3, 13, 25 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al. (Patent No. US 5,698,892) in view of Jedlicka et al. (Patent No. US 5,604,362).

Referring to claims 3, 13, 25 and 36, Koizumi et al. discloses as above, but is silent that the filtering layer comprises acrylic. Jedlicka et al. discloses that the most common substance for filter layer is acrylic (Col. 2, lines 1-3). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide acrylic filter layer in the device of Koizumi et al. since acrylic is the most common substance for filter layer.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ikeno et al. (US # 5,135,891) discloses that a photoresist of sufficient thickness to fill a scribe line is applied on an entire substrate.

Ormond et al. (US # 6,201,293) discloses electro optical devices with a reduced filter thinning on the edge pixels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung C. Sohn whose telephone number is (703) 308-4093. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SCS

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October 4, 2002



Kevin Pyo
Primary Examiner